Traffic Lights – Key Element in Smart Cities
Advantages and potentials of a linked infrastructure
Traffic Lights – Key Element in Smart Cities

1. Smart City (ITS)
2. Linked Infrastructure and Detection
3. Car2X Communication
5. Conclusions
What is a Smart City?
Smart City - Detection

Data Collection
- Loops
- Video, Radar
- Vehicles (Car2X)
Car2X – Communication

State of the art

- CAM
- DENM

CAM: Position, Direction, Speed, veh. Type, [other] @1..10Hz

DENM: Warning @event

Cooperative Awareness Message

Decentralized Environmental Notification
Car2X – Communication

State of the art

• SPaT
• MAP
Car2X – Communication
Smart City - Other Input Data

Other Input Data

- Air Quality
- Weather Data
Smart City – Dynamic Signing

Central Traffic Management

• Redirection
• Traffic Information
• Speed limits
Smart City – Optimal Traffic Lights

Traffic Lights
- Gating, Traffic Actuation
- Coordinations
- Network Control
Smart City – Technical Requirements

Intelligent Local Controls

Network Control

Detection

TCC
Smart City – INES+

- Runtime environment
- Visualization
- Controls Unit
- Interfaces

TCC

Green times
STP-selection
Parameters

Traffic data
Process data
Smart City - Conclusion

- Increasing number of traffic in a city centers
- Capacity of the roads in the cities is limited
- Smart Cities have to realize a precise detection of traffic
- Modern traffic controller and high-quality interfaces are a must
- Technologies to face and solve these problems (Hardware and Software) are available
- To get a traffic management system is it better to implement small comprehensible steps, than one large step that is under normal conditions not manageable
- Software must be of help to the operators and not the other way around.
- In future, more information will be available by C2X
Thank you!!